VOLUME VI NO. 4

PORSCHE PANORAMA

APRIL 1961

HAPPY WINNERS

L. to R. Elinor Holbert, Bob Holbert, Roger Penske, Erich Filius of POAC and Lisa Penske.

PORSCHE PANORAMA

OFFICIAL PUBLICATION PORSCHE CLUB OF AMERICA

T. KENDALL TWIGG.....EDITOR

VOLUME VI · NUMBER 4 · APRIL 1961

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THE EDITOR SPEAKS

The average Porsche driver you see driving down the streets and highways of our land presents a picture of serene contentment. Many people have misconstrued this picture as 'snooty' or being 'overly smug.' This is not the case. Here is a man (or woman), a happy driver, who is experiencing the rarest of pleasures — driving a Porsche. True, he feels a little sad for some of his more unfortunate brethren who because of many reasons are forced to drive poor-handling, ill-sprung, inefficient, finned monsters. However, there is no haughtiness in this driver's heart. He is glad to the chance to EXPERIENCE the thrill that goes with driving a piece of mechanized equipment as near to perfect as is possible to manufacture. He does have EXPERIENCES that are denied his brothers and he rejoices in the sensual pleasure these EXPERIENCES afford him. We shall from time to time, starting with this issue, present in these pages some of the more interesting episodes and invite your participation.

Probabilities are that this driver is also sharing his interests with the fellow members of his club. He supports the activities and events and he writes for PANORAMA. Make this picture complete the next time you drive down your favorite road. You are driving the finest of autos, you support your club, (don't you?), the only remaining question is, "HAVE YOU WRITTEN SOMETHING FOR PANORAMA?"

THE "IMPROVEMENT" CONTEST

We though it a good idea to solicit from our readers ideas for the improvement of Pano and so in January we presented you with a chance to enter in a contest which could win for you a cash prize and at the same time be of help to the editor in his efforts to present a magazine that truly reflects the spirit of PCA. We are most happy with the results and are pleased to announce the winners along with the winning letter.

First prize, $10.00 — Paul R. Heinmiller

Second prize, $5.00 — Dottie Russler

Third prize, $2.50 — Robert F. Clarke

We extend our deepest thanks to those of you who took the time and effort to send in their views. I can assure you that every letter has been closely read and your ideas are being considered — many have already been put into effect.

In addition to the winning letter I would like to print a few of the other excellent suggestions we have received:

CONTEST WINNER

Contest Editor
Porsche Panorama

Panorama is good already, but no matter how good it is, I believe you'll agree that there's room for improvement. Here are my ideas to make Pano the best one-marque publication in the United States:

1. TECHNICAL CLINIC — Select 3 or 4 club members who are tops on technical matters to act as a Panel. Have readers submit questions to the Panel. The questions would be circulated to Panel members; one or all would comment. Pano would print the original query and the Panel's answer.

2. "HOW WOULD YOU DO IT? — In this feature column, a reader's question would be printed and other readers would be invited to submit their solutions to the Pano Editor. The best solution would receive a token prize, perhaps an ashtray. Pano would print the original question, plus the best reply and 2 or 3 of the runner-ups.

3. BYLINES — All articles and items of any length should be signed by someone. If the writer is on the editorial staff, he should sign with his initials.

4. LETTERS TO THE EDITOR — Why not give the writer's address as well as Region. He may be too new to be in the Roster. This would be valuable if a reader wanted to query the letter writer directly. Also, why not a brief title on all letters to the editor to give the reader a hint of what the letter is about?

5. SUBHEADS — They are a nuisance to write and insert, but they do improve the looks of a solid page of type and therefore make it more inviting to read. Why not try them?

6. HEADLINES — You may want to consider going from all caps, which are difficult to read, to upper and lower case headlines. You'll find that they're easier to read and eat up less space.

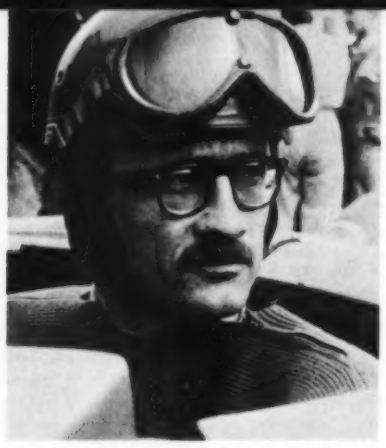
7. SPELLING — There were at least four spelling errors in the January issue. (Of course, you're in good company. Competition Press at times appears as if it were put out with someone's left hand and SCI only within the past year has raised its standards.)

8. STYLE CONSISTENCY — There were at least eight inconsistencies in style in the present (January) issue. A Style Book and a good proof reader would be invaluable.

9. ON TIME — Get it out on time! If you haven't enough material for a 20-page issue, print one of 16. But GET IT OUT ON TIME!

10. CUTENESS — Warmth and friendliness is something to strive for; cuteness is cloying. The

drift to Page 11



Richard von Frankenberg, author of this article, racing journalist and editor of Christophorus. Opposite, he is shown driving the Factory Spyder at Le Mans in 1956.

FROM MY PRACTICE

Ed note: This is the last of a series of articles by Richard von Frankenberg which originally appeared in Christophorus. This month he continues his comments on tires.

In my last article I said that different types and sizes of tires have a very great influence on the roadability and the top speed of a car and we had stopped at the point dealing with the expansion of a tire.

A normal tire, and also the so-called "Super-Sport" tire for speeds over 110 mph, changes its diameter at high speeds. The technical term is: it expands. The diameter increases because the carcass together with its rubber covering becomes wider due to centrifugal forces. This, however happens only with normal tires having a carcass in which the cord threads are laid diagonally on top of one another. The radial or braced tread tire (where the cord, or in the case of Michelin, the metal threads, are laid crosswise to the direction of motion) does not do this. Now one must realize the diameter of the rear wheels is at the same time a question of gear ratio. The bigger the diameter of the driving wheels, the "longer" is the gear ratio. And the longer the gear ratio, the worse the pick-up. This fact is very often taken advantage of in racing. Bigger tires are used when one wants to attain a little longer gear ratio. Mostly one is unable to induce such delicate differences by the use of different drive and crown wheels in the differential. Contrarily, one uses smaller tires, when one wants to get a little more pick-up. One has, of course, to be very careful when making these experiments, because the smaller contact surface of the smaller tires naturally also means more abrasion, and eventually also somewhat less adhesion. In our Porsche experience the thing looks like this: with a normal ratio in fourth gear (normal for the 1600 and the 1600 S; the production Super-90 has a somewhat shorter 4th gear) we have the relation 1000 rpm. equals 20.2 mph. At 5000 rpm. you are almost exactly on 101 mph. — but this is purely a theoretical relation, applying as it does to normal 5.60 x 15 tires at rest. By the time you have reached 5000 rpm, the tire has "expanded" by something between 4% and 6% so that by the stopwatch you achieve between 106 and 108 mph. With the 5.90 x 15 tire the theoretical value lies somewhat higher yet than with the 5.60 x 15 tire, i.e. at about 20.82 mph by 1000 rpm., so that with 5000 rpm. we attain about 104.5 mph., without expansion, which is then actually between 108.8 and 110 mph. However, the question is whether with 1600 Super and 5.90 x 15 Super Sport tires you actually achieve these 5000 rpm. For it could be that the gear ratio has already become too long. The engine will then not bring the car over a certain rpm. limit and the needle will come to a standstill at somewhere around 4800 rpm. Then the smaller tire is the faster one. When you take a Michelin X 165/15 or a Dunlop SP 165/15, there is no expansion, which means that the theoretical 1000 rpm. relation still applies almost exactly by 5000 rpm. A Size 165 is approximately the same as a size 5.90.

Do you know how tire sizes are measured? The world over one has become accustomed to give all tire sizes in inches. 5.90 x 15 means that the rim has a diameter of 15 inches (1 inch equals 2.54 cm., making it ca. 38 cm.), and that the tire is 5.90 inches wide, or ca. 15 cm. The French are the only ones who for years have remained in opposition to this Anglo-Saxon system of measurement in the tire industry and therefore the Michelin tire is known as 165/15, which is actually quite illogical, because there we have a metric and an inch measurement side by side. 165 is the width of the tire in millimeters. However, when one reckons out the 5.90 inches, we get exactly 150 mm. and not 165. But in spite of this, the 5.90 tire is almost exactly as wide as the 165 tire. Whereby, you can see what sort of a mix-up there exists in the tire industry. For reasons which I can't get to the bottom of, the Dunlop people have employed

the Michelin method for their SP tires and called them 165/15.

To recapitulate: with the 165/15 braced tread tire, the relation of 21.44 mph. per 1000 rpm. is good for both high and low speeds.

While we are on this subject of high speeds, permit me to make a remark. It is very important that the wheels of your Porsche should always be properly balanced. Dunlop recently supplied us with figures for this. When the rim at any one point is out of balance by so little as 100 grams (3.527 oz.), there is a weight of 33 kilos (72.6 lbs.) pulling on this wheel at a speed of 87.6 mph., which is quite a normal touring speed for a Porsche on the autobahn. This on the one side, exerts a negative influence on the smooth running and also the roadability of the car, and on the other hand causes the tires to become unequally worn which is both uneconomical and dangerous. When the road is wet, the car will start to slip at the point where the tire is unevenly worn, a fact which you've probably not even noticed on making a cursory inspection of your tires.

Further, the tire "works" within itself to a certain extent. This results, especially when driving sharp turns and by high outside temperatures, in increased air-pressure within the tire. As a norm, one can assume that after an hour's driving a tire will show 2.84-4.25 lbs. by very fast driving even 5.69 lbs. more air pressure than when it was standing. For these reasons be careful about controlling your air-pressure after long trips in summertime! You should regulate your air pressure in the mornings before you start or after very short town trips, for only then can exact figures be read. Incidentally, the less air pressure a tire has, the more it will "work" within itself. If you blow up your tires a little higher than recommended — we talked about this last time — the internal "working" of the tire is reduced and thereby the life of the tire is somewhat prolonged.

Why a smaller tire, or a non-expanding one, is faster than one with a large diameter, is not only a question of the diameter and thereby the gear ratio, but also a question of the road resistance. Admittedly, at high speeds, road resistance plays a secondary role to air resistance, but nevertheless it can also become noticeable. The wider the contact surface of a tire on the road, the more its road resistance. A 5.90 tire has more than a 5.60 tire, which also leads to the question: how fast is a tire? But, as there are two sides to everything, so there are here also. For a tire with a wider contact surface normally also has a positive influence on the roadability. The "slower" tire (the wider one) therefore wins more points when one is comparing the advantages and disadvantages. Other than that, the wider tire naturally gives a slightly more comfortable ride (softer, due to the larger cushion of air) and has less abrasion and thereby has a longer life.

When you ask me, I recommend a 165/15 braced tread tire for every Porsche.

NEWS FROM THE REGIONS

Carrol LeFon

KENTUCKY Region members enjoyed an armchair trip to Russia (via Porsche, of course) at their March meeting through the courtesy of Dr. Alfred Paul of Cincinnati. Frank Becket writes that the color slides of the trip along with many witty and interesting remarks on the highlights of Dr. Paul's and Dr. Solkin's enviable tour of the Soviet Union provided color and humour exceeding that in the Doctor's article "Russia Recollected" which many of us read in the January "Christophorus".

ALLEGHENY Region held its organizational meeting in March with 39 Porsche people in attendance. The Board of Directors are Walter Cooley, John Elder, Dick Hogner, John Beres, Peter Reist, Herbert Lemper, Dick Fox and Shep Adkins. Relations must be good with the police in the Western part of Pennsylvania. Allegheny has a picnic planned for May. The notice advises Porsche owners to stop by the police barracks for directions to the park.

CENTRAL INDIANA Region, in cooperation with the Lilly Motor Club of Indianapolis and other area sports car clubs are organizing the First Indiana Braille Rally on May 21. Children from the Indiana State School for the Blind will be taken on a simple rally. The instructions will be in Braille which the young navigators will read to the drivers. Cooperations has been bountiful, we learn from Bob Dender and Tim Blakely. The Indianapolis Star has given the event wide publicity and WFBM-TV plans television coverage of the event. The Downtown Kiwanis Club will sponsor a banquet afterwards and many trophies and mementos are being donated. Mr. Hutchinson, Superintendent of the School, is most enthusiastic as are the children. The event offers a pleasant outing as well as affording them incentive to gain proficiency in Braille.

NORD STERN Region had an attendance of 100 people at their March meeting, a big turnout for their region, Rita Trenholm tells us. (A big turnout for any region, Rita). The meeting was held at the local Porsche Dealer in Minneapolis. A buffet dinner with refreshments, movies, a raffle, Porsche talk and plans for the future was the program. Archie Walker hosted the Nord Stern folk.

GOLDEN GATE'S February Rally, the "Valentine Venture" dreamed up by Alice Bliss and Marian Livingston apparently was the kind of thing that Porsche ladies are noted for all over. It involved all sorts of hearts, 233 whole hearts plus gosh knows how many part hearts. There were hearts with arrows, lace hearts, plain hearts, hearts at which to throw darts, candy hearts in jars. Prizes were heart shaped boxes of candy, of course. Roger Harris and Jack Ising won followed by the Gomezes, the Littles, the Scotts and the Alcocks in that order.

GOLDEN GATE'S report on the Wine Testing Tour, announced in March Panorama, is a little incoherent. Min Terada was the official leader, but even before the start there were stragglers which had to be rounded up. So those on the spot were sent off under the leadership of Phil Troth. Phil led his entourage up a one lane dirt road which terminated at the home of a very pleasant HIGHWAY PATROLMAN with cruiser parked in the driveway. There wasn't room to turn in the driveway so he obligingly let the Porsches turn around on his lawn, regroup and head for the hills with his blessings—at least they sounded somewhat like blessings. Beaulieu, Beringers and Charles Krug wineries were planned for the tour, however, because of the shortness of time and wet weather, the report said, Beringers was deleted. Half of the cars were lost for a while between wineries. The Rugges and the Capurros won five bottles of wine each for answering most accurately questions about the route.

The February event of PCA **WESTERN MICHIGAN** was an ice run at Austin Lake, held in conjunction with the Kalamazoo Sports Car Club. Two different courses were laid out, a slow run and a fast (?) run. Art Jones was fifth place overall. Next in PCA money, in order, were Phil Gidley, Bill Otter, Jodie Jordan, Isabel Jones and Bern Jordan. The 10 Porsches finished in the first 19 places overall, which out of 80 entries speaks well for the breed. However, a Corvair won first overall. This is the second time this has happened on ice! Western Michigan is one of our fastest moving regions. Things happen so rapidly that items appearing as news on one page of the Region's bulletin are overtaken by events on a later page of the same bulletin. In the February issue of Panorama we reported from the first page of the Regional newsletter (Vol. 1, No. 2) that the membership had approved a certain name for the newsletter. On page two the newsletter advised that the membership had decided that the name was not exactly what

they wanted. (Yes, Phil, we do read the news from the Regions avidly, but Carroll spun out as he passed page two on a fast dash to the Panorama deadline. He has to confess to making an error—something he seldom does—confess that is.)

PCA **SAN DIEGO** is very active with eight events lined up in the next two months. Dick Bauer and Bob Dunn are operating a rally school enthusiastically attended by the members. Jerry Lehrer has probed the vagaries of S-90 carburetion with complete success. In March they did a fascinating sounding thing called "Run to the Sun in Borrego", in April a slalom and in May the whole Region plans to weekend with PCA Fresno.

Gordon Rietveld, sans Jane, (to lighten the load) won **ARIZONA'S** March Economy run laid out by Loren and June Dean with a mileage of 44.4. Alan Raphael was second with 43.2 and Nick and Catherine Sakiotis were third with 41.5. The Kelty's were dead last with a mileage of only 32.6! The course ran through places having wonerous names (to we Easterners) such as Mesa, Mecca and Apache Junction.

PCA **ROCKY MOUNTAIN** does not sell PCA car badges. It gives them away—but they have to be earned through participation in club activities. 100 points are required to gain possession of the prize. Officers get 40 points for examples. Points are awarded on the basis of distance traveled to attend meetings—1 point for distances up to 25 miles, 2 up to 50 and so on. Other points are awarded according to quantity and quality of contribution to the Region and to National in events, meetings, committees, bulletins and PANORAMA.

NORTHERN NEW JERSEY held a Cocktail Party and White Elephant Sale at Two Bridges Inn in Lincoln Park. This is an annual event of the Region in which members auction off things they don't need to members who do. The items are both Porsche and non-Porsche — electric shavers, Porsche factory manuals, jewelry, Porsche windows, throw-pillows, wrenches and what have you. According to Marilyn Richberg both White and Pink elephants can be had.

PCA **METROPOLITAN NEW YORK** hosted the first gymkhana of the year of the Conference of Long Island Sports Car Clubs gymkhana championship competition on March 25 at Islip Speedway, L. I. The event was a high speed two lap affair with cars running in five classes from VW's and Fiat 800's to Jag's and 300 SL's. Results were not available to Panorama at press time.

While the Western and Southern Regions have been basking in the warm sun, fog and rain the dauntless members of both **CENTRAL NEW YORK** and **HUDSON-CHAMPLAIN** Regions have been just a little daunted by the Russian winter they suffered this year. Snow, ice, sleet, hail, graupel and high winds curtailed many activities planned such as Hudson-Champlain's Quaker Lake event and Central New York's Ice Gymkhana. Now that Spring is here the members are desalting their cars, removing the mire and grime and refurbishing inside and out for the lovely days. And you know what? You couldn't drag these hardy PCA people out of their beloved hills and valleys for all of the sunshine of Florida and California combined.

FOR SALE

1958 Porsche 1600 N Coupe. Black with dark green interior. Concours winner at Elkhart Lake June 1960. An exceptional car with only 21,000 miles. $2750.00 Les Widen, 718 Park Avenue, Winnetka, Illinois, HIllcrest 6-6581.

1955 Porsche Speedster — 1500 miles since complete engine, transmission and front-end overhaul; New paint in original blue color; new top, tonneau in good shape, with spare half-tonneau; New wiring; 22 assorted tires, six extra wheels; regular muffler and straight pipes; tow-bar, fire extinguisher and other assorted goodies. Ready for road or track. Price—open to reason. "20 Grand" Steinbeck, 2314 West Forster Avenue, Chicago, Illinois, Ardmore 1-7016.

One pair No. 80A-1044 Koni Shocks. New in carton — FRONT. Will fit 356 A or B. Prepaid anywhere in U.S. $40.00. H. Horne, 620 Glenwood Avenue, Johnstown, Penna.

Porsche — 1960. 1600 Super Coupe, silver with red leather and corduroy, head rest, foglights, seat belts, outside mirror, luggage rack with straps, chrome wheels, clock, AM-FM radio. 5500 miles, one-owner. $3,500 cash. P. J. Baugh, P.O. Box 684, Charlotte, N.C. JA 3-5121 or FR 5-5203.

1956 Coupe. White with Black all genuine leather interior. New Michelin-X tires, new muffler and tail pipes, fog lights, dash clock, cocoa mats, outside rear view mirror and other extras. 62,000 miles. Engine perfect, body in concours conditions. Never raced or wrecked $2000.00. R. H. Schoessow, 1629 S. Calhoun Road, Waukesha, Wisconsin.

1959 Cabriolet 1600N. Blue body, red leather interior, Blaupunkt FM/AM Radio, Michelin-X tires, luggage rack, 30,000 miles. Immaculate condition. $2,750.00. C. W. Stockton, 66 Branford Circle, New Schrewsbury, N.J. Liberty 2-3918.

1955 Speedster with '57 Carrera GS engine. Silver lacquer, Michelins, nylon top; engine just reassembled after winter inspection tear-down. This is a beautiful and exciting road machine for the enthusiast, not a racer or grocery store coupe. $2500.00. P. A. Gidley, 12448 E. Greenfield Dr., Lansing, Michigan, National 7-6647.

LET'S PLAY IT SAFE!

In going thru my file of Panoramas recently, I found two articles describing special or unusual installations of Seat Belts in Porsches. In neither of the write-ups however, did the author offer anything other than installation instructions. Again, in a Regional Newsletter, I found some mention of a good Seat Belt but the information was concerned primarily with the high cost of such equipment and where to find one CHEAP!

In fact, very little seems to have been published anywhere which provides what, for me, would be the essential information about Seat Belts. I'd like to know for example: should I use one since I don't race, what is the exact function of a Belt and how does it work, what are the specifications and requirements for a good Belt and who has set up Standards if any, and, above all, what should I look for when buying a Seat Belt so I can be sure it's SAFE?

In searching further for some answers to these questions I find that, while considerable research has been done and on a sound scientific basis concerning the use of Seat Belts in passenger cars, the results have not been made readily available. On the other hand, the tomes compiled, with tables, data and statistics dealing with Accidents, Speed, Speed Limits, Traffic Regulations and related subjects, if laid end to end would reach from Detroit to Stuttgart and back aagin. And this information has been quite generally published.

To digress for just a moment before discussion of the Seat Belt as a MINIMIZER of injuries in automobile crashes, I would like to add my own few comments to the millions of words already printed on the CAUSE of accidents.

SPEED AND ACCIDENTS

It has been interesting to note that in none of the reports presented by Federal or State Agencies, Safety Foundations, Organizations or Research Groups is it claimed that SPEED per se is the CAUSE of accidents. Yet despite this obvious conclusion, there seems to be an ominous trend in some quarters, to continue to make SPEED the scapegoat for accident casualties. The most discouraging example of this movement is the increasing number of road signs that have appeared recently shrieking to high heaven that "SPEED KILLS." As any schoolboy will tell you, IMPACT may kill . . . but not SPEED.

As a matter of fact, the reports I have read are reluctant to come out with any definite conclusion at all on the CAUSES of accidents. No one seems willing to "point the finger." Everywhere the issue is carefully avoided. In one of our more enlightened states, we have a DECREASE in Speed Limits followed by "claims" of accident reductions. Could this reduction in accidents be the result of removing the "accident-makers" . . . the drunks, imbeciles and habitual reckless drivers . . . from the highways leaving them to the more or less sane majority? And curiously enough, though conversely, another progressive state is campaigning for fewer accidents by INCREASING their Speed Limits.

ACCIDENT CAUSES

While it is encouraging to see that something is being done, it would be reassuring if there were more understanding of the CAUSE of accidents and more realistic attempts made to effect a CURE. As it is, we seem able to prescribe only a few palliatives, largely ineffective. I, for one, have little qualms about stating quite clearly that the CAUSE of accidents is PEOPLE . . . the DRIVERS, and I doubt that many would disagree. And it will be only if and when the Lame, the Blind, and Halt AND the Idiots are removed en masse from behind the wheel and put on the sidewalks where they belong . . . that we will begin to see any realistic and permanent reduction in traffic accidents. And this isn't about to happen in the foreseeable future.

We can legislate Vehicles and also Highways but are reluctant to *insist* that PEOPLE *must* drive SAFELY. This is all of a pattern with our successes in the technologies and our failure to further our sociological progress. We have learned to fire a rocket round the moon (or nearly) but don't know how to educate a child. We can build a car that travels 100 miles per hour on a super highway but cannot prevent a clip-wit from being behind the wheel.

WHAT CAN WE DO ABOUT IT?

My own personal philosophy about SPEED has become very much a matter of laissez-faire. After all, the modern automobile does get you from here to there and usually all in one piece. Our highways are continuously being engineered to provide for more and faster traffic. And DRIVERS, at least the younger ones, are receiving more and better training than was available when I learned to drive. And despite all the

hullabaloo in the press about accidents, the records show that it is SAFER to drive a car today than it was 20 years ago! The accidents per car on the road per miles driven are LESS today than they were in the Roaring Twenties! So unless, or until the slaughter on the highways reaches the proportions of a bloody carnage, there is little that we can or need do about it.

We all CAN and SHOULD nevertheless, do all things possible to protect our own lives when driving on the highway. One of the more effective Safety measures receiving increasing recognition is the INSTALLATION and USE of Safety Belts. Of course this is just . . . in case! WE, to be sure, are all good drivers and don't cause accidents. But some driver on the highway may set up a series of circumstances from which it is impossible for us to avoid a CRASH.

Some excellent authorities state that a Seat Belt may minimize injuries received in a crash by as much as 60 per cent. I was convinced by this excerpt, ". . . it was observed that *users* of safety-belts sustained approximately 35 per cent less "major-fatal" grade injuries than did *non-users*." The complete text and the source from which this is quoted are given later in this article. The answers to the questions posed in my first paragraphs are, for the most part, quite clear and simple. Since most injuries in crashes are caused by the car occupants being thrown out of the vehicle or about within the vehicle, the Seat Belt *functions* as a restraining device to hold the body securely in a fixed position in the car.

In order to accomplish this, the Belt must be able to withstand considerable strain. But how much . . . will the same belt hold a 100 pound woman or a 200 lb. man? If I weigh 175 lbs. will the Belt have to take the strain of my 175 lbs. in a crash, with a safety factor of perhaps an additional 100 lbs. added? The answer might surprise you. In the average crash the human body (and a Seat Belt) may be subjected to forces as great as 6,000 pounds or more!

WHAT'S A "G"?

In seeking the answer to what these forces are and where they come from, I had to go back a bit and dig up some faintly remembered high-school Physics. It all has to do with GRAVITY of course, and the head man in this department, you will recall, was one Sir Isaac Newton. In his Laws of Motions he states, "Every body tends to persevere in a state of rest, or of motion in a straight line, unless acted upon by an impressed force."

The force here is GRAVITY, that is, it is measured in terms of Gravity as, 1G, 2Gs, 3Gs, etc. Everything is subjected to a constant force of 1 Gravity, 1G . . . or its own weight. If, for example, you weigh 150 lbs. you are continuously being pushed to the earth by a force of 1G, in your case 150 pounds.

To go a step further, when you floor-board the accelerator pedal in a Normal Porsche, you are *pushed* back into your seat . . . you feel a force exerted on your body. This force might be measured as perhaps 2Gs or twice the weight of your body. If you went along with Bonnier in an RS61 from 0 to 60 in 4 seconds or thereabouts, you would be *slammed* back into the seat with a force of something like 4 or 5Gs . . . about 700 lbs. or so. The important thing to note is, that only in the CHANGE from the "state of rest" to the "state of motion" that is, during *acceleration,* are the forces of G applied. Once the "state of motion" has been reached, no matter how great the speed, the only constant force remaining will be 1G.

Similarly, and conversely, the same forces of G are exerted in *deceleration* or during the CHANGE from the "state of motion" to the "state of rest" and it is with this latter CHANGE period that we are primarily concerned. During the acceleration period, even in an RS61, the body is given adequate support by the standard seat. During deceleration however, as when applying full brakes at 100 mph, an unrestrained passenger would suddenly find himself all of a heap some 30 feet in front of the car and probably not all in one piece. He "tended to persevere in a state of motion" whereas the RS chose to come to an abrupt halt.

Sir Isaac has given us yet a third CHANGE to think about in his remarkable statement. This concerns the CHANGE from motion "in a straight line" to motion "in a deviation from the line." This happens when taking a sharp bend and here the G forces encountered are directional. The best example of what happens in this instance is seen in a pull-out from a power-dive when the G forces may become so severe as to cause the pilot to "blackout" or lose consciousness.

Finally, in all three types of CHANGES; Acceleration, Deceleration and Deviation from a straight line . . . it is the RATE at which the changes take place that determines the AMOUNT of force (Gs) that are involved. Thus a Deceleration brought about by normal application of brakes at 60 mph to come to a complete stop in several seconds will not produce any great amounts of G forces. Plowing into hay-bales at the same speed will account for faster Deceleration (a smaller amount of time) with an increase of the Gs involved. And slamming into a brick wall would cause almost instantaneous CHANGE or Deceleration, with tremendous amounts of Gs applied to the occupants of the car and the Seat Belts they are wearing . . . if any.

WHAT HAPPENS IN A CRASH

A study of the accompanying Table and Graphs will perhaps give us a better idea of what we're

AVERAGE DECELERATION (G) THROUGHOUT TOTAL STOPPING DISTANCE

VELOCITY (mph) AT START OF IMPACT	STOPPING DISTANCE (inches) (16)	(25)	(36)	(49)	(64)
15	av.G 5.6	av.G 3.6	av.G 2.5	av.G 1.8	av.G 1.4
20	" 10.0	" 6.4	" 4.5	" 3.3	" 2.5
25	" 15.7	" 10.0	" 7.0	" 5.1	" 3.9
30	" 22.6	" 14.4	" 10.0	" 7.4	" 5.6
35	" 30.7	" 19.7	" 13.6	" 10.0	" 7.7
40	" 40.1	" 25.7	" 17.8	" 13.1	" 10.0
45	" 50.8	" 32.5	" 22.6	" 16.6	" 12.7
50	" 62.7	" 40.1	" 27.8	" 20.5	" 15.7
55	" 75.8	" 48.5	" 33.7	" 24.8	" 19.0
60	" 90.3	" 57.8	" 40.1	" 29.5	" 22.6

FIGURE 1

talking about. In Figure 1, you will note that the figures given in the columns are for AVERAGE deceleration rates. This means for instance, that if your car is stopped in a collision at 30 mph in a distance of 36 inches, it would have an average deceleration rate 10 times gravity or 10Gs. And if you were being decelerated in a Safety Belt at this rate, your body would be PULLING against the belt with an average force of 10 times your own weight.

You will note too that at any given speed, as the stopping distance *increases* the average force (G) *decreases*.

It is especially important to remember that this force is not applied at a uniform or average rate in a crash. The force begins at zero (the moment of impact) and then increases enormously as the frame and structure of the car body is being deformed and brought to a stop. It is not the average load that breaks a seat belt . . . it is the highest PEAK load. The peak load can only be determined in a controlled and measured crash.

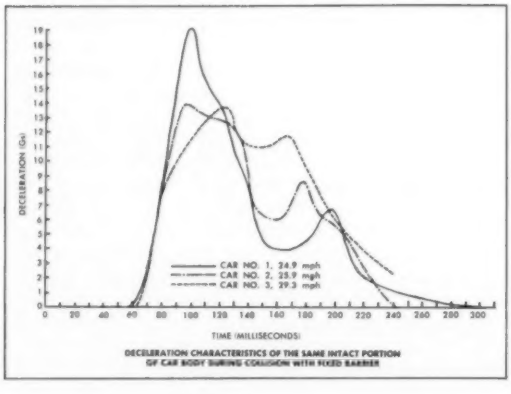

DECELERATION (Gs)
CAR NO. 1, 24.9 mph
CAR NO. 2, 25.9 mph
CAR NO. 3, 29.3 mph
TIME (MILLISECONDS)
DECELERATION CHARACTERISTICS OF THE SAME INTACT PORTION OF CAR BODY DURING COLLISION WITH FIXED BARRIER

FIGURE 2

No two crashes are exactly alike. The Graphs in Figures 2, 3, 4, show actual crashes of cars against a fixed barrier with the results accurately measured with electronic instruments. These graphs have been taken from a paper, "Technical Findings from Automobile Impact Studies" presented before the SAE, Detroit, Michigan by D. M. Severy and J. H. Mathewson, Department of Engineering, Institute of Transportation and Traffic Engineering, University of California.

In each of the three graphs, you will see that the PEAK load develops almost immediately after impact and then decreases gradually till completion of the deceleration. If you multiply the peak G values shown by your own weight, this will give you a pretty close estimate of the maximum load your Seat Belt would have to take in a similar crash situation.

HOW *STRONG* IS A SAFE BELT?

Just how much force can a human body stand in a crash? The best medical and physiological data on this subject, collected from numerous sources and carefully analyzed, indicates that the normal, adult human body can probably take a momentary load of around 6,000 lbs. in an automobile safety belt without too much likelihood of serious injury, if the belt is so designed as to distribute the load properly. It follows then, that a good SAFE belt must withstand a force of this amount . . . 6,000 pounds or 40 Gs (using 150 lbs. as the weight of the wearer of the belt.)

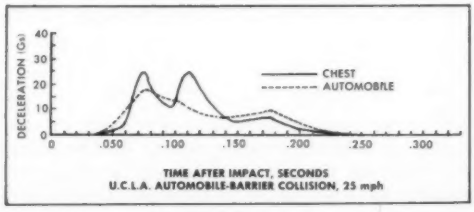


FIGURE 3

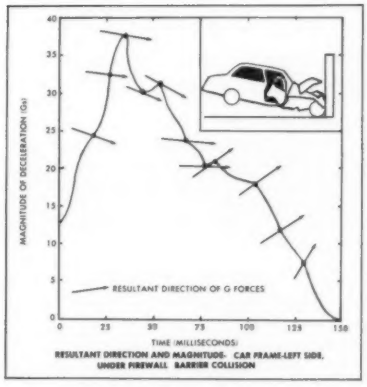

MAGNITUDE OF DECELERATION (Gs)
RESULTANT DIRECTION OF G FORCES
TIME (MILLISECONDS)
RESULTANT DIRECTION AND MAGNITUDE- CAR FRAME-LEFT SIDE, UNDER FIREWALL BARRIER COLLISION

FIGURE 4

While I might have offered this final conclusion, of and by itself, it has been a source of considerable enlightenment to me to trace the steps and follow the procedures whereby I have arrived at this knowledge. I hope that Panorama readers of this article (if any) may similarly profit.

In Part 2, of this article, I will discuss the Standards developed for Safety Belts and by whom . . . report on a most illuminating study, "SAFETY BELT EFFECTIVENESS in RURAL CALIFORNIA AUTOMOBILE ACCIDENTS — A Comparison of Injuries to Users and Non-Users of Safety Belts", the results of a joint study by the California Highway Patrol and the Automotive Crash Injury Research of Cornell University . . . and list the things to look for when buying a SAFE Seat Belt. Watch for it in May Panorama.

Wm. J. Sholar,
Potomac Region

CONTEST *drifted from Page 3*

Amens, Wows, (?) and "asbestos envelopes" belong in the gossip column of a high school newspaper.

11. CAPTIONS — A larger type size would make them more readable. Your readers are older than you think and their eyesight isn't so good. Why make them work?

12. ARTICLE STATUS — when articles are submitted, either print them or reject them. Too many articles and items from Hudson-Champlain have been submitted and never heard from again.

13. PROGRAM IDEAS FOR PROGRAM CHAIRMEN — Some ideas now and then for Program Chairman would help. Where to get films, speakers, etc.

Let me assure you that all these comments are made in the spirit that we're all striving to make Pano an even more successful publication. Best of luck on your new job.

Paul R. Heinmiller
Hudson-Champlain Region

from *Bob Clarke* — "why not assign the complete Pano each month to one of the chartered regions. With 39 regions this would require a region to have the "duty" once every three years. Each region would submit their material to the regular national editor by a deadline and he would make sure all was ready and perform any last minute polishing. The best regional issue every three-year period could be awarded. In this way we would hear from everyone around the country. The quality should be excellent as each region would probably try to 'out-do' the other."

from *Dottie Russler* — "Simplify the technical articles. A sentence or paragraph inserted by the tech editor explaining to the average reader the whys and wherefores of some of the mechanical operations that are perhaps well-known to any mechanic but not me. Slant more articles to the regional level rather than to the individual or interest group — how regions are managing to get increased membership or participation from all their members. As an annual feature, issue a separate index indicating in which volume articles of a certain type can be found."

from *Gene Rideout* — "Pano must become more COSMOPOLITAN. Pano belongs to all members, should not reflect one locale, requires more organized and varied help from the membership in all regions."

from *Bob and Loneta Newbrough* — "Consider the inclusion of material of interest to the ladies. Proper apparel for events and traveling, and how to travel with children."

Ed note: We have started in this issue the feature "From the Passenger's Seat" as a result of the above suggestion.

Just because the contest is over, don't stop with your suggestions. The cash prize was obviously a token and should not stop you from sending any suggestions. I am much in favor of Doc Rideout's suggestion, "Let's get more COSMOPOLITAN."

TIP TO ALL PCA'ers

The Conn. Valley Region heartily endorses the Jug End Barn for the Sixth Porsche Parade. After two visits, Norm Milliard, who has been to all previous Parades states that this site has the biggest and best lounge (and bar) so far. He is looking forward to renewing old acquaintances come June 26.

THE POETRY CORNER

Here I sit
All Broken hearted.
I'd just down-shifted
When my clutch cable parted.

PORSCHE WINS THE INDEX OF PERFORMANCE — SEBRING 1961

Bob Holbert - Roger Penske accomplished a job they had set out to do and thus Porsche salvaged something from the Ferrari onslaught.

Holbert and Penske finished 5th overall, leading all the other Porsches, won the Index of Performance trophy and their class. All this with a 1500 RS61, the smallest RS 61 in the race.

Finishing right behind in the Index and Class competition were Bob Donner and Don Sesslar in Donner's 1600 RS61. They finished 7th overall.

In 9th overall was the Canadian 1600 RS61 from Toronto driven by Peter Ryan and Francis Bradley.

The Porsche Factory team's boxscore read: no runs, no hits, no errors and a big fat "0" as both the 1700 cc factory cars were a flop. The Gurney-Bonnier car, developing clutch trouble almost from the start, finally gave up at 4:50. The Hermann-Barth car had been setting a steady pace. Where could you find two more reliable drivers? Bonnier insisted on taking this car over, whereupon he promptly blew it up trying to keep up with Bob Holbert, around 6:10 P.M. Officially, the trouble was listed as camshaft problems, like happens when you over-rev, neighbor.

The Porsches all got off to good starts. Bob Holbert for once had some success on a LeMans start and Bonnier was up in sixth on the second lap.

Noon saw the Porsches in 10th, 11th, 13th, 14th, waiting for some Ferrari breakdowns which never came.

Porsche #38 - 1600 RS60 from Chicago, driven by Augie Pabst and Bill Wuesthoff went out of the race officially at 12:05 with a leaking transmission seal causing problems which made it useless to abuse the equipment any further. A tough break for mechanics, Glen Carroll and Wolfgang Rietzl. Glen has his own private Sebring jinx it seems.

The afternoon hours saw the Chuck Cassel-Dave Lane driven Porsche go out with a blown engine. The Ryan-Bradley RS61 started to lose brakes, clutch and all gears except third. The Holbert-Penske car was running like a Porsche should, getting in position for the vital home stretch drive in the coming darkness.

Suddenly between 5 and 6 P.M. "Uncle" Herbie Dramm closed up his hobby shop and there were no more factory team cars as clutch and revs sent Dramm to an early supper.

8 P. M. . . . Holbert and Penske were leading in Index of Performance and they were the big hope for anything in the overall standings.

Around 9:30 P.M., Penske pulled into the Brumas Corp. pits with a left rear tire flat and a clutch gone. The clutch had started going bad during the afternoon hours.

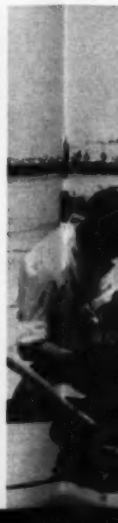
The tire was changed and right rear light fixed in 3 minutes 44 seconds . . . there was no time for the clutch. Penske barely made it out of the pits to try and hold the index lead for the remaining time.

10 P. M. . . . Penske manages to finish the race without the clutch for the Index victory, and the Porsche gang surrounded Holbert-Penske, Donner-Sesslar, Ryan-Bradley.

Well earned congratulations go to these drivers and cars which carried the battle this year at Sebring.

Joe Bonnier at SPEED

"Siggy"



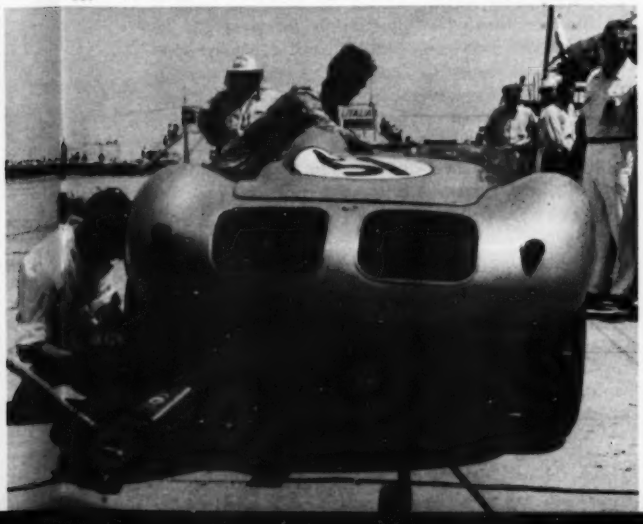
This is the 4th year that George Beggs has covered Sebring for PCA . . . and it's the 3rd time for Charles J. Wick. We are greatly indebted to both these PCAers for the fine shots of this year's 12-hour show.

Don Sesslar at the Hairpin

Juergen Kirberg adjusts brakes

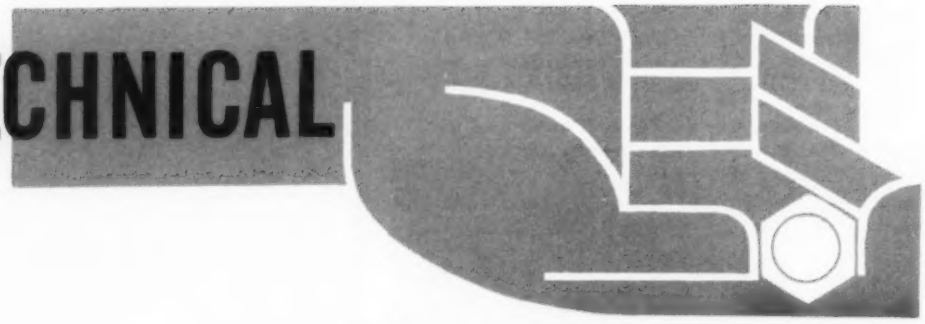
Pressure Pit-Stop . . . 9:30 P.M. . . . Holbert-Penske car

"Siggy" and "Paul" work on Car #51 . . . note IMPACT wrench



Francis Bradley goes through Webster turn.

TECHNICAL



EDITORS: Ted Smith Charles Beidler, Jr.

ONE MAN'S STORY OF A HAUSSERMAN

The technical articles in Pano usually mirror the problems of "Life with a Porsche". For the last three years the Hausserman type clutch has indirectly helped Pano's article starved editor greatly. He should feel a certain distinction; since he is probably the only man ever helped by the Hausserman (with the exception of the "service department" income).

The "H" (for H---) clutch became a part of the Porsche with the advent of the 1958 model. Its advantages (thanks to Ted Smith, April '60 Pano) are listed as follows:

1. fewer moving parts
2. better able to withstand high rpm's.
3. It has no balance problems
4. It is smoother in operation.

If Pano articles can be used as an index, the main problem encountered with the "H" clutch during the first two years was the breaking of fingers in the spring plate. Adjustment is critical; because without it, it is possible to over-release the clutch and make the convex spring plate become concave with broken fingers flying everywhere. The quality of control of the spring plate manufacture has been mentioned in Pano on several occasions. We are of the opinion that not ALL fingers were broken because of wrong adjustment. Why do we say this? Because Porsche subsequently stiffened the spring plate and made the fingers much stronger.

With the advent of the 356B model, the "H" underwent its first change. The 356B spring plate left off the release plate. The throw-out bearing and its fork were re-designed and a centrally guided sleeve was provided for the bearing. It was postulated that this new set-up accomplished a possible remedy for broken fingers. This we doubt. All this new set-up accomplished was perhaps a slightly smoother pedal action. The proof is in the fact that when Porsche apparently analyzed the real trouble, an improved stronger spring plate was introduced. This improvement comes in two forms; to fit the 356A and B. To change a 356B type to the B requires changing the throw-out bearing and fork as well. If the pressure release plate on the 356A type spring plate was the culprit, one would think that the factory would have advised converting the A setup to the B. Although expensive, the cost of this would be far less than more and more clutch trouble.

In July of 1960 a factory Service Bulletin set things straight. At this time a new spring plate with 700 Kg. (as against the former 500 Kg.) pressure on contact was introduced for all models, except the Normal. At the same time this new stronger spring plate was made available as a replacement in the 356A form with pressure release plate. In the U. S. and probably elsewhere it takes many months before the available stock on the shelf is used. With the stronger pressure plate the Carrera model sported a steel (Part #692.116.121.00) instead of iron pressure plate which meets the interior surface of the clutch disc. This item is advised for all models that enter competition; although the iron pressure plate can be used in the non-competing Carrera. The new stronger spring pressure plate can be identified in two ways: it has #692 stamped on it; its fingers look stronger and if it is put on a shop floor alongside the weaker model and a rubber heel is pressed on it and the other one separately, anybody can tell.

Now for the "One Man's Story". Our old 356 '54 lasted six years and 66,000 miles with only one clutch repair because of the worn cast iron pressure release plate. This was later changed to steel, which would have probably prevented any repair had our car had it initially. This car went through the life of a demonstrator in its early days and also many rallies from which

she brought home a few tin cups. The new 356B has experienced neither; yet at 12,000 miles the clutch began to slip badly. A tear-down revealed a ruined clutch disc and a badly scored flywheel. The disc was replaced and the flywheel turned down at a local shop. The transmission and engine seals were dry, and it appeared at the time that the cause was too much grease in the gland bearing on the flywheel. We honestly don't know. We do know that it did no good to have the flywheel turned down at a local machine shop. Unless one has the factory tools and jig available, don't do it. 1000 miles later we were back at the shop again with a slipping clutch. This time the flywheel hadn't had time to appear suspicious, so a new spring plate was ordered. What arrived was a 356A type plate (500 Kg. pressure). Since the mechanic at the "Authorized Porsche Dealer" had no factory advice, he installed it. Within a few hundred miles, grinding sounds resulted on full clutch release and clutch slipping again appeared. The third visit to the Porsche and its owner to the shop was accompanied by some profanity. Orders were given to "Keep the damned thing till the improved parts were obtained."

The tear-down revealed the following: The flywheel surface was anything but smooth, the 356A type pressure plate with VW transporter throw-out bearing had ground away on the guide sleeve, peculiar to the 356B. At this time the owner had "had it". Orders were given to go all the way. A new flywheel was installed. Grease seals were again checked and found OK. The improved (750 Kg. pressure) spring plate was obtained, but it was only available in this area in the 356A form. This required removing the guide sleeve and changing the throw-out bearing in its hanger. Since all this was finally accomplished, things seem to be right for the first time. We had complained that the new 356B didn't seem to have anything over the 356 '54 for over a year. With the completely new clutch, it has at last come to life. Now with a clutch that transmits power, we can say that it does have a little more power.

We have spent over $400.00 total to finally (we hope) get the 356B into sound shape. For this money, we could have had a Super. The money is not all; something you cannot even put a price on was involved. The Wife has put up with much for six years, including many a midnight orgy working on the "Old One". For the first time (and I don't blame her) she issued a terse statement to the effect that I should sell the "damn thing" and buy a Karmann Ghia which would be as trouble free as her two VWs have been.

We do not know the full history of the infamous "H" clutch. We do know, from the pages of Pano that the U. S. Army tried it in 1942 on trucks, and promptly abandoned it. A full biography of the Hausserman family would be most welcome in Pano.

We still love Porsche; but we hope that along with their trend to develop their own parts, they will soon spend a little time in designing and manufacturing their own clutch. A last parting word to fellow sufferers: If you have "H" trouble not of your own doing, be SURE not to settle for ANYTHING but the new improved spring plate in A or B form as needed. If you purchase a new Porsche, do so only with a written guarantee from the dealer to cover all clutch repairs proven not to be due to faulty adjustment or abuse for at least 25,000 miles. Porsche was known in the early days to pull brand new cars off the show-room floor and add certain improvements.

A Mad "Old Doc"

SPRING CLEANING

The season of salt and snow and gravel will soon be over — we hope. Winter driving conditions can raise havoc with iron and steel. A little preventive maintenance now will save a lot of trouble later.

First, be sure the car is kept clean as possible. There is still a lot of salt mixed with the slush that gets all over your car and corrosion can lead to costly body repairs. Both the visible portion of the body and the underside, including suspension should be hosed down regularly to remove the accumulated slop. Be especially sure to clean out under the channels formed by the body panels where they are turned under at the bottom edges. Salt and water can collect here and stay until rusts through and drains. Your best bet here is Paul Heinmiller's idea of cleaning out these channels and filling them with black roofing cement. The cement protects the metal by eliminating any places for puddles to form. This will make it easier for you next winter.

After things have dried out a bit, it's not a bad idea to thoroughly check the brake system. Water that has seeped inside the drums can corrode the wheel cylinders and render them inoperative. A succession of fast stops on a straight, level road will give you a rough estimation of the system, but you really should remove all four wheels and test the cylinders for correct operation. To do this, first fit a strong metal strap over the brake shoes. If this step is neglected, depressing the brake pedal will cause the pistons to pop out of their bores; reassembly is time-consuming and there is also the possibility of ruining the linings by saturating them with brake fluid. After the strap is attached, get the wife or a friend to push the pedal while you watch all the cylinders for proper operation. Cylinders that operate slowly or not at all must be repaired or replaced. A repair kit available at many supply houses will take care of minor problems. Frozen cylinders must be replaced in full for safety.

All rubber hoses should be checked for holes,

cracked coverings, and deterioration. If they are not firm when squeezed or if they are cracked or worn through from contact with another surface, they must be replaced immediately. Incidentally we have found that only the German ATE replacement is effective. The English part is incorrect in three different measurements.

From The Air-Cooled Advertiser
Hudson-Champlain Region

VIP

Very Important Porsches (yours?) pushed by Very Important People (you?) will be at the VI (Sixth, Very Important) Parade in June
Very Important Plea: Mail Reservation Now!

THE PRESIDENT'S TROPHY

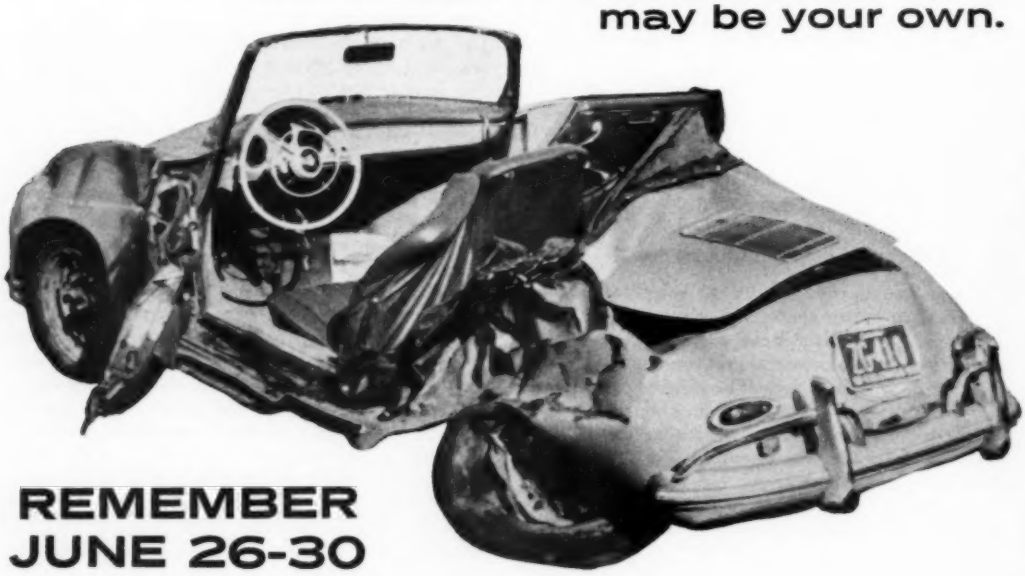
Can the Mid-West do it again? MICHIGAN REGION won at the IV Parade; CHICAGO REGION won at the V Parade and has already formed a "Bring Back the President's Trophy Committee." How about you and your region? How many Very Important Porsches and Paraders will your region have at the VI Parade.

The President's Trophy will be awarded at the VI Parade to the region with the largest number of cars in attendance — with due consideration for distance. This year will see a bigger distance credit for regions over 1800 miles away. Points are computed by multiplying the number of cars from the region by ten times a distance factor (Parcel post zone, extrapolated beyond the usual limit of 8). Regions with Panorama address within 150 miles of South Egremont have a factor of two, whereas, the west coast regions have a factor of nine — and Alaska and Hawaii are still higher. Ten extra points per car will be given for a parade of cars arriving together at Jug End Barn.

Arrive at VI Parade in concours condition —

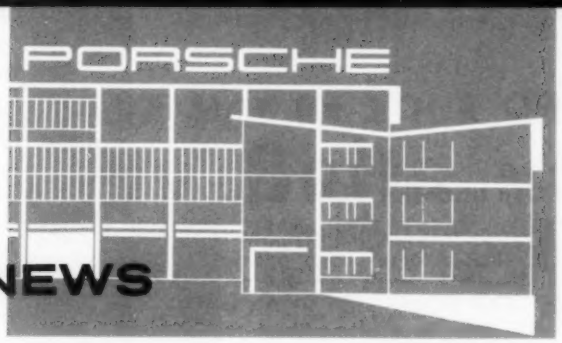
DRIVE CAREFULLY

Remember, the Porsche you save may be your own.



REMEMBER
JUNE 26-30

Don't let this be you on the way to Parade!



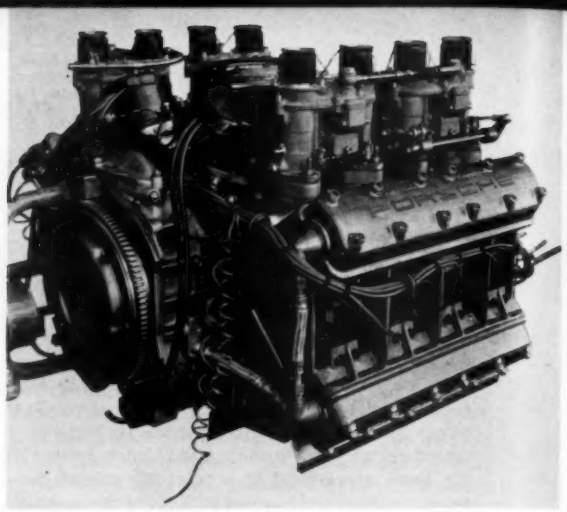
FACTORY NEWS

Here's a weird looking prototype seen at Le Mans for official practice April 8-9. The streamlined effect has been developed for the Le Mans high-speed circuit to try to reduce the handicap against the more powerful 3 litre cars. No reports have been received on whether or not the special body provides any higher top speeds and it is not yet decided whether this Porsche prototype will be on the Le Mans starting-grid on June 10-11.

FORMULA I and the FLAT 8

Well, here it is . . . and just DOUBLE! The Factory has just released these photos and specs of the new Formula I chassis and one of the new engines under development. At this point it is not certain that the engine will be ready in time to compete in this year's events.

In any event, Porsche will start the season with its already successful 4-cylinder engine developed from Formula II. The successful cars of the December races at Cape Town and East London will be entered for the first time in the Grand Prix of Brussels with Joe Bonnier and Dan Guerney behind the wheel.



FLAT 8

1961 PORSCHE FORMULA I RACING ENGINE

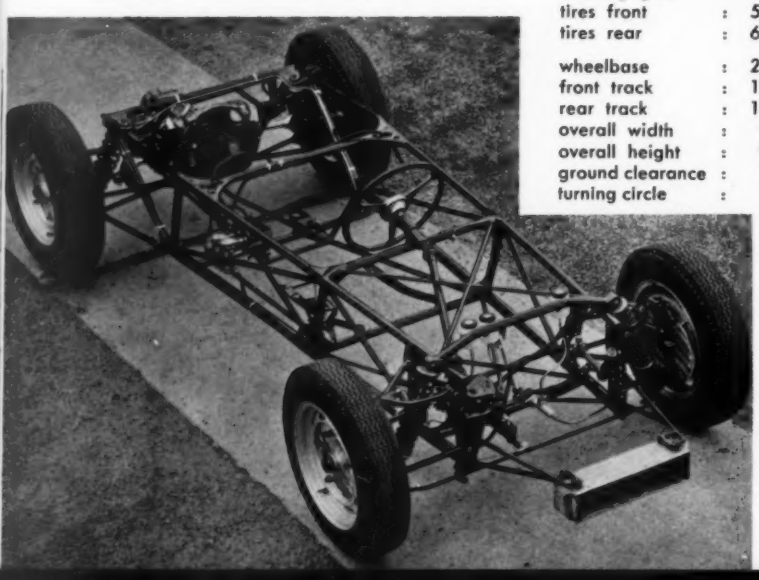
8 cylinder, 4 stroke opposed, air cooled, o. h. c.
camshafts driven by bevel gears, similar to CARRERA engine
cooling fan flat above center of engine, bevel gear drive
crankshaft with plain bearings
individual cylinder head for each cylinder
2 common cam housings for each cylinder bank
light alloy pistons
1 intake and 1 exhaust valve per cylinder head
spring operated valves
dual battery ignition
2 spark plugs for each cylinder head
generator driven by V-belt
4 Weber dual carburetors

displacement	1498 cc
bore	66 mm
stroke	56,6 mm
compression ratio	1 : 10

the engine is layed out for 10,000 RPM

1961 PORSCHE FORMULA I RACING CHASSIS

frame	:	welded seamless tube space frame	
front suspension	:	independent, double A-frame links	
rear suspension	:	independent, double A-frame links	
front springs	:	coil spring coaxial with shock absorber	
rear springs	:	coil spring coaxial with shock absorber	
steering gear	:	ZF-Ross with divided tie rods	
tires front	:	5.00 x 15	
tires rear	:	6.00 x 15	
wheelbase	:	2300 mm	90,5 in
front track	:	1300 mm	51,2 in
rear track	:	1270 mm	50,0 in
overall width	:	920 mm	36,2 in
overall height	:	900 mm	35,4 in
ground clearance	:	120 mm	4,7 in
turning circle	:	11,5 m	37 ft 9 in



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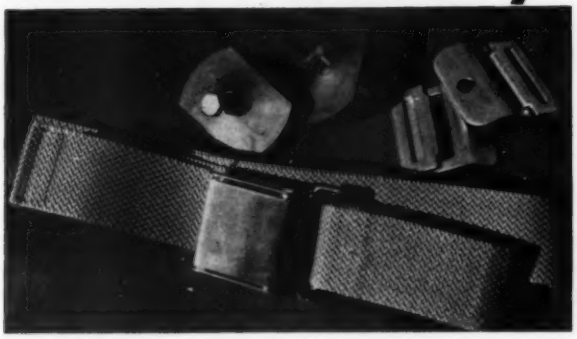

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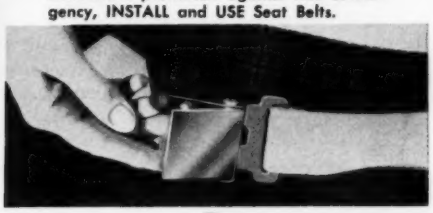

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- **The Lift Lid on buckle is completely retracted between side walls to prevent accidental tripping or dynamic (inertia) release in a crash.**
- **Webbing is 100% NYLON, 2 inches wide, pebble grain and shock-absorbing.**
- **Belt exceeds Federal Government Specifications written by G.S.A. and U.S. ARMED SERVICES.**
- **Belts test to over 6,000 pounds. Both PULL and DROP tests are used on the Belts.**
- **Reinforcing plate and hardware furnished with the Belt. The reinforcing plate is .108" thick, measures 2"x3¼" and is dome-shaped to give nearly double resistance to bending.**
- **The Tie-down Bolt is ⅜ inches in diameter.**

Choose your belt from a wide selection of beautiful blending colors. Available are: Maroon, Navy Blue, Gray, Green or Black.

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RALLYE ROUNDE

RALLYMASTERS, MAN YOUR WATCHES

With experience and more accurate equipment, rallyists have gotten awfully good. This has caused the rallymaster of today to use extreme care to establish accurate norms on which to judge this 'new breed'. Accurate elasped time calculations are a must and to obtain these calculations, the course must be accurately measured. A truly accurate measurement requires measuring the rally course so that each mile is exactly the same length. Measurement of this type would be ideal and sounds simple, but it is in fact impossible. The problem is to come as close as possible to this ideal.

For accurate measuring a fifth wheel gives the best results. Next using tires such as Michelin-X and finally, but poorest, other tires. To get maximum accuracy all tires should be inflated to rather high pressures to keep expansion to a minimum. It is the expansion of ordinary tires that leads to error in measurement. The fifth wheel (a bicycle wheel and tire) expands much less than an ordinary tire simply because of the much smaller quantity of air to expand. Few people have fifth wheels available, so this discussion will be limited to the use of ordinary auto tires.

Start your measurements with hot tires. This means your tires should have been driven about 20 and preferably 50 miles. This sounds like a lot mileage and is a lot of trouble, but experience with a fifth wheel versus auto tire measurements has shown that if you want consistent mileages, a 40-50 mile run is necessary before you start to measure. For measurements to be accurate to a current standard of one second per checkpoint, the course must be measured with an odometer reading to the one-hundredth mile. A one-thousandth reader is even better. The odometer should be a continuous reader and care should be taken that it is ready to 'take up' immediately at the starting line. If an electric odometer is used, make sure it has just clicked over and will run the full one-hundredth before clicking again. As a precaution, a mileage check should be given within a half mile or so of the start so that everyone can take a measurement from a running odo and not have to worry whether or not a lag existed at the start.

The course should be driven on the RIGHT hand side of the road. Care should be taken to carefully define the exact points at which average speed is to be changed. The exact location for the checkpoint must be established and marked so that checkpoint personnel can make no mistake in knowing where to set up their timing stations. With a one-thousandth odometer I make a practice of making the timing point hit exactly on an even hundredth of a mile.

Measure the rally in one continuous run. Do not measure one part on one day and another part the next day or week. Avoid measurements taken on days with sharp changes in temperature such as a hot summer day interrupted with a shower which cools down the road surface. A cloudy day is best inasmuch as the effect of sun and shadow on roads at different times of day can cause havoc with attempts at consistent measurement.

Watch out for wheelspin on gravel, dirt or wet pavement. This is particularly important on hills. The reverse of wheelspin can occur when braking coming down hills. Take all hills slowly, both going up and coming down — especially those hills with loose surfaces. If your odo cable is driven by a non-driving wheel, as in the Porsche, you will avoid the uphill wheel slippage, but you can still get the downhill sliding effect.

It may be argued that on the day of the rally the contestants will not stay on the right side of the road, will spin their wheels, will be subject to temperature changes, etc. This is all true but the rallyist can allow for what he sees and does on the day of the event. He cannot intelligently cope with both the vagaries of his own measurement and the unknown vagaries of the measurements of the careless rallymaster.

This all sounds like the acme of perfection and, in fact, it is. Of course you can't pick your weather for measurement, but you should measure the course at least two times after it has been firmed up and one measurement should have reasonable weather conditions.

After you have measured the course as carefully and accurately as possible, you should provide the contestant with frequent mileage checks in their instructions — every 25 or 30 miles. This will enable them to correct their mileage to official mileage often enough to overcome most of their expansion problems. The odometer check leg should be at least 20 miles. The old 10-mile standard was never long enough even for tenth-reading odometers and certainly is not enough for today's super-scientific navigators. If it is an all-day event, make sure you give an odo check of about 20 miles after lunch. Tires do funny things when allowed to cool for an hour, so give the contestant a break.

Once the course has been accurately measured, you must compute the elapsed times. A minute-per-mile factor carried to four decimal places and cumulated between checkpoints should be sufficiently accurate. It is very important to cumulate the elapsed times for each speed change and not round each result to seconds. If you round off to an even number of seconds for each speed, it is possible to get an error of two seconds (assuming four different speeds between two check points).

Get at least one other person (the more, the merrier) to check your elapsed time calculations. Remember, to err is human! If possible give your checker a set of route instructions in printed form with mileages and let him compute from these. This gives a double check on both the calculations and the clarity of average speed instructions.

An even better check is to have an expert navigate the course with the final printed instructions under rally conditions and time them at each checkpoint. This would show up any and all slips in calculation as well as errors in course directions.

If you follow all the above suggestions, you will probably put in six months work presenting a three-hour rally. A lot of work, you say? True, but you will be able to take pride in running an event with which even the most discerning rallyist can find no fault.

Tom Lusk
Potomac Region

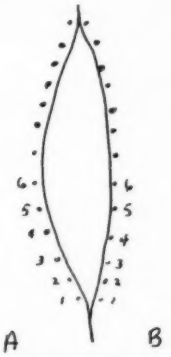
FROM THE PASSENGER SEAT

As announced last month we hope this feature will be a permanent part of the pages of Pano. At any gathering of Porsche people, there is subtle evidence of the interest that the ladies take in the Porsche. We hope to share these interests. Vacation time is coming. What is your favorite solution to the packing problem? I hear June Syze has a simple and effective way to remove splattered insects. There are some beautiful hand-knit Porsche sweaters. Will you share the "recipe"?

Our thanks go this month to MARION ANDREWS, Northeast Region for her instructions on how to "Sew A Fine Seam."

If your Porsche is bursting at the seams and if you have recovered from the shock of learning the high price of getting a piece of thread put in the right place, you may find this helpful.

Equipment needed: two blunt "Tapestry" needles — small diameter or two darning needles. Carpet thread (to match the leather if possible) or dental floss can be used. DEFINITIONS: "IN" means putting the needle into the leather from the right or finished side. "OUT" means bringing the needle from the under side.



Take one piece of thread with a needle on each end. Using the original holes in the leather, bring one needle OUT of hole A1 and the other OUT of B1. (See illustration.) Center the thread (like starting a shoelace). The needle that came out of B1 now goes IN A1 and OUT A2 — two separate operations, needle perpendicular to the work. The other needle goes in B1 and OUT B2, across into A2 and OUT A3. The original needle goes IN B2 and OUT B3. Draw that stitch tight. Continue in the same manner keeping the seam tight as you go along. At the end you won't be able to tighten the thread and still manipulate the needle. I use a crochet hook to pull the slack out after I have made the last stitches. Warning — If the thread starts to get a bit frayed, start a new piece. This is especially important on the part that gets pulled with the hook.

It really isn't as complicated as it sounds. This particular description covers the situation where you can get at both edges of the leather and leave the upholstery on. Some Porsche seams are attached to a cloth backing. Then you have to untack the upholstery at least enough to get to the back side of the seam involved. The thread follows the same devious path but you are spared the hooking routing. The result is a smooth, straight seam that is difficult to distinguish from the higher-priced thread.

PORSCHE SEBRING NOTES

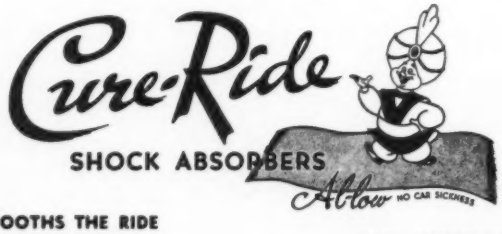
Most of the best Porsche service engineers in the U. S. were in attendance at Sebring. They were assigned to certain cars as follows:

#38 Donner - Sesslar—Nick Mattlinger
#49 & #50 Gurney-Bonnier—Herbert Dramm; Barth - Hermann—Kurt Meier, Vasek Polak
#51 Holbert - Penske—Sigmund Mayerlin, Paul Kunzmen

The Brumos Car Corporation did an outstanding job this year at Sebring. Mr. Brundage hired Joe Lane, formerly chief scorer at Sebring, to score his car's progress in the race and also to mastermind their index win. Joe's results were the only accurate ones in the place. "Siggy" Mayerlin and Paul Kunzman did some of the best Porsche work at Sebring. Kudos go to the entire Brumos Corp. gang. What a difference a year made.

. . . Juergen Kirberg, San Francisco area Porsche of America Service Representative, changed front brake shoes on the Barth-Hermann car in 10 minutes. Kudos go to this hard working lad . . . Onions go to "Joe" Bonnier who doesn't seem to understand the word public relations or could it be a case of the helmet no longer fits the enlarged head . . . Kudos go to handsome Eddie Barth, little Hans Hermann and shy Dan Gurney, who do a great job of driving and promotion as Porsche factory team drivers. Same goes for the factory team manager, Huschke von Hanstein . . . The factory team 1700 cc engines were an attempt to get the last ounce out of the 4 cylinder engine against the bigger opposition . . . Wild rumor had the factory team using an 8 cylinder engine in night practice. The rumor caught fire after the #49 car lost a rear engine deck during practice. Deck was carried off by souvenir seekers. Dramm swore that Ferrari had stolen it. All turned out well when police returned the missing deck . . . Too bad Herb Dramm and Vasek Polak didn't have better luck with the factory cars . . . Holbert and Penske drove a well planned and smart race . . . Don Sesslar and Bob Donner were outstanding. Don looked like he had never been away from a Spyder for over a year. Bob lived up to what we PCA'ers had been saying for a long time, that he's one of the best . . . Peter Ryan showed why he's the favorite in Canada . . . Nick Mattlinger did a beautiful job of preparation and pit work on the Donner-Sesslar car . . . Why were some Porsche pits using regular big wrenches instead of impact wrenches? They looked so slow on those wheel changes . . . Brumos used a 1500 cc engine especially to go after the index win. This engine and the driving of Bob Holbert and Roger Penske were the right mixture for Porsche's third Sebring Index Trophy.

" SPECIAL OFFER " for PORSCHE OWNERS



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PCA PERSONALITY

Bill and Alsa Knoll

Bill is the founder of the ORANGE COAST REGION in January 1961. He is its first President. His Porsche family tree goes back to 1955, when he acquired a 1500N Cabriolet. Number two was a 1957 1600N Coupe which was sold in 1959 to take part in that year's Treffen in Europe where he took delivery of his present 1960 1600S ruby red Coupe.

His affiliation with PCA started in 1957 when he joined the San Diego Region where he held the position of Secretary-Treasurer for two years.

He saw the light of day the first time in the village of Graefenhainichen, Germany, in 1920, whence he emigrated to the U.S. in 1929. He is married to a lovely Nebraska girl by the name of Alsa and is called "Dad" by Teri Ann, age 3, and Eric, age 13.

Bill is an aeronautical engineer, working on space projects at the Aeronutronic Division of the Ford Motor Company, Newport Beach, California. One of Bill's proudest moments in his PCA career was when the First Porsche Weekend was pronounced a success, for it was his brainchild, and there were times when the ultimate result was in doubt.

His hobbies, other than Porsche and PCA, include sailing. He has been navigator in the San Diego-Acapulco Yacht Race four times and the Honolulu Race twice. But PCA is taking most of his free time these days. He has also acted in the capacities of Chief Technical Inspector and Turn Judge in the regional SCCA and CalClub meetings.

DON'T FORGET OUR PHOTO CONTEST

You have until May 31st to submit your photos which show your Porsche in a setting which reflects your section of the country. Prove to your fellow members that YOU live in the most photogenic and beautiful part of our country. See March Pano for details.

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Load is primarily on right rear wheel . . . left wheel lifts
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